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EXAMINER

JACOBSON, TONY M

ART UNIT	PAPER NUMBER
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2644

DATE MAILED: 06/23/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

✓

Office Action Summary

Application No.

09/407,751

Applicant(s)

PLUVINAGE ET AL.

Examiner

Tony M Jacobson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 September 1999.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-132 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-132 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 September 1999 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>5, 6, 8-12, and 14</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. New corrected drawings are required in this application because the drawings originally filed are informal. Applicant is advised to employ the services of a competent patent draftsman outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

Specification

2. The disclosure is objected to because of the following informalities: At page 17, line 3 of the specification, reference is made to "[t]he second screen 17" in Fig. 17; however, there is no element labeled by a reference character 17 in the figure.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 11-15, 24-27, 32-35, 38, and 76 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly

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claim the subject matter which applicant regards as the invention.

5. Claims 11-15, 32-35, and 38 recite the limitation "the data processing resources."

There is insufficient antecedent basis for this limitation in the claims. Claim 1, upon which each of these claims depends, makes no prior mention of "data processing resources."

6. Claims 24-27 recite the limitation "the user input." There is insufficient antecedent basis for this limitation in the claims. Claim 1, upon which each of these claims depends, makes no prior mention of "user input."

7. Claim 25 recites the limitation "the encoded audio data product" in line 2. There is insufficient antecedent basis for this limitation in the claim. Claim 1 makes no prior mention of an "encoded audio data product."

8. Claim 76 recites the limitation "a transformation according to the hearing profile of the particular audio data product" in line 2. There is insufficient antecedent basis for this limitation in the claim. Claim 74 makes no prior mention of a "hearing profile of the particular audio data product." Because the specification does not disclose the particular audio data product possessing a hearing profile, and because claim 74 recites, "modifying the particular audio data product according to the hearing profile",

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the following assumes that Applicant intended to recite "a transformation of the particular audio data product according to the hearing profile."

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

10. Claims 1, 5-9, 11-18, 22-32, 36-40, 42, 47-50, 54-63, 65-67, 69-74, 76-80, 84-97, 99-116, and 120-131 are rejected under 35 U.S.C. 102(b) as being anticipated by Terry et al. (US 5,388,185).

11. Regarding claim 1, Terry et al. discloses in Figs. 1, 2, and 6 a system for adaptive processing of telephone signals (producing customized audio data), comprising: a source of an audio data product (10); processing resources (20, 30, 40, 50, 60, 90, 100, and 110), coupled to the source of an audio data product, configured to associate the audio data product with a customer hearing profile (including the contents of 70 and 80) for use in production of a customized audio data product (column 2, lines

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14-37).

12. Regarding claims 39, 74, 99, and 111, in normal operation, the system of Terry et al., in association with one or more users, performs a method for providing customized audio products, comprising: providing an interface (a telephone) for access to an audio data product (audio from a distant terminal or other source of telephone audio); delivering a particular audio data product (to the telephone network – see column 2, lines 24-25) receiving a customer hearing profile associated with the customer (column 5, lines 10-13); storing a machine readable hearing profile for a customer (column 2, lines 27-32); receiving and accepting, via a data network, machine-readable orders (a request) from the customer for a particular audio data product (the customer requests initiation of a telephone voice signal from a distant station (sending end) by issuing machine-readable orders via the DTMF keypad 130 of Figs. 2 and 6, as is well-known in the art); associating the hearing profile for the customer with the particular audio data product (for use in production of a customized audio data product); modifying the particular audio data product according to the hearing profile to produce a customized audio data product (column 2, lines 14-23); transmitting, via a data network, (delivering) the customized audio data product to the customer (column 2, lines 62-65); accepting feedback from the customer concerning the customized audio data product (column 5, lines 13-22); and modifying the hearing profile in response to the feedback (column 5, lines 22-25). (By allowing the user to modify one of the hearing impairment profiles to produce a closer match to his or her individual hearing impairment problem, the system

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is accepting customer feedback concerning the customized audio data product and modifying the hearing profile in response thereto.)

13. Regarding claims 5, 47, 77, and 113, the system and method of Terry et al. includes (provides/maintains) a machine-readable registry of customer hearing profiles corresponding to a plurality of registered customers of the audio data product in communication with data processing resources (column 2, lines 27-37), and further including resources for reading, modifying, and writing particular customer hearing profiles in the plurality (column 5, lines 1-31). The normal method performed by the system includes the steps of reading, modifying, and writing particular customer hearing profiles in the plurality to maintain the registry; and the step of associating a hearing profile for the customer with the particular audio data product inherently includes retrieving the hearing profile from the registry (column 2, lines 27-32).

14. Regarding claims 6, 94, 108, and 128, since the hearing profile is determined by online testing, as described at column 5, lines 13-18, with the user surrounded by actual listening conditions, listening conditions (i.e., whether the listening environment is extremely noisy, or not) are determined, and the hearing profile derived by that testing inherently includes a value (one of a plurality of values) that indicates listening conditions in which the customized audio data product is to be played; i.e., relatively quiet listening conditions will result in relatively low (normal) hearing threshold values, whereas extremely noisy listening conditions will result in relatively higher hearing

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threshold values (column 1, line 59 –column 2, line 11). Thus, the hearing profile will inherently include a value (one of a plurality) indicating listening conditions in which the customized audio data product is to be played, as broadly as claimed. Further regarding claim 108, the step of modifying the audio data product in response to the resulting hearing profile, as generally disclosed by Terry et al., will then be responsive to those determined listening conditions.

15. Regarding claims 7, 65, 95, and 129, Terry et al. indicates at column 2, lines 27-37 that the database may contain a plurality of specific hearing profiles, each corresponding directly to one of a plurality of users, or it may have pre-defined profiles corresponding to (indicating) typical hearing impairments (hearing characteristic types) of customers. The database thus contains a value (of a plurality) indicating a hearing characteristic or a hearing characteristic type of a customer for whom the customized audio data product is to be played.

16. Regarding claims 8, 66, 96, and 130, because the user hearing profile in some embodiments of the system of Terry et al. is based on the user's actual (psycho-acoustic) perception of "comfort level" bands of noise which are presented over the telephone in an online hearing test as described at column 5, lines 13-18, the hearing profile so determined includes a specification of "psycho-acoustic characteristics" (the sensations or perceptions of a person due to sound) of a customer for whom the

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customized audio data product is to be played, as broadly as claimed.

17. Regarding claims 9, 67, 97, and 131, as described at column 1, line 59 –column 2, line 11, the individualized user hearing profiles used by the system of Terry et al. include an audiogram ("T Table" 70 of Fig. 1) characterizing a customer for whom the customized audio data product is to be played (a set of data representing the minimum sound intensity [threshold] for hearing as a function of frequency).

18. Regarding claims 11, 69, and 101, the system of Terry et al. includes (provides) a source of a plurality of customer hearing profiles (column 2, lines 27-37), data processing resources inherently include logic to accept data concerning a customer for whom the customized audio data product is to be played, and to produce (produces) a customer hearing profile for the plurality of customer hearing profiles in response to the accepted data, as disclosed at column 5, lines 1-31. (Logic for performing the disclosed steps must inherently be present.) Further regarding claim 101, the user interface (the DTMF keypad of a telephone) is a "graphical" user interface, accessible by the user, as broadly as claimed; and the hearing profile is machine-readable, according to the general disclosure of Terry et al.

19. Regarding claims 12-17, 24-27, 48, 56-59, 70-73, 78, 79, 86-89, 100-107, 114, 115, and 122-124, the system of Terry et al. includes/provides a source of a plurality of machine-readable customer hearing profiles for a corresponding plurality of customers

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(column 2, lines 27-37), and data processing resources inherently include a network interface (describable as being part of [comprised in] the source of the audio data product [the entire system is a source of the audio data product]), a graphical user interface (the DTMF keypad of the telephone in cooperation with DTMF detection means within the system [see claim 16], also describable as "tools" for accepting data characterizing customer feedback) accessible to/by the user/customer via the network interface and the network (as is well-known in the telecommunications art, the user interfaces with the system by means of a DTMF keypad and DTMF recognition means within the system via the network interface and the network) adapted to receive user input, including the request for the audio data product (tools by which a user selects an instance of the audio data product and issues a request for the selected instance) (the audio data product being telephone audio from a distant station) and an identifier of the customer hearing profile (column 5, lines 3-7), and logic/resources (inherently – see column 5, lines 1-7) to accept/receive/gather, via the graphical user interface (input tools), via the network interface, input data/information (or feedback) concerning (hearing characteristics of) a customer for whom the customized audio data product is to be played, and to produce/add and/or modify a (machine-readable) customer hearing profile for/in the plurality of customer profiles (in the registry) in response to the accepted input data (or feedback) (column 5, lines 1-31). Accordingly, the method performed by the system in normal operation includes the steps of providing these elements and performing the steps recited above. Further regarding claims 79, 106, 107, and 115, because the process of updating the user hearing profile as described at

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column 5, lines 13-25 can be described as optimizing a model of the user's hearing profile (column 2, lines 16-17), it constitutes an "optimization modeling process" (in response to the feedback and to the database), as broadly as claimed.

20. Regarding claims 18, 22, 23, 50, 54, 55, 80, 84, 85, 116, 120, and 121, Terry et al. discloses at column 3, lines 36-40 that the audio data product may include a speech signal generated at a sending end by a telephone user (claims 23, 55, 85, and 121), audio generated by a tape recording (claims 18, 50, 80, and 116), as well as other sources. A speech signal generated at a sending end by a telephone user can also be described as a live audio voice stream (especially in the context of digital audio input to the system, as disclosed at column 4, lines 50-53, relating to Applicant's claims 22, 54, 84, and 120).

21. Regarding claims 28, 60, and 90, although Terry et al. does not explicitly disclose that the processing resources of the system include logic to produce information about billing for requested audio data products for customers, the system, overall, includes a telephone network (column 3, lines 30-35). At the time the invention of Terry et al. was made (as well as at the time the present invention was made) public telephone networks substantially always comprised processing resources that include logic to produce billing information for requested audio data products (toll calls, special services such as directory assistance, etc.) for customers. The disclosure of Terry et al., therefore, inherently comprises processing resources including logic to produce

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information about billing for requested audio data products for customers.

22. Regarding claims 29, 30, 61, 62, 91, 92, 125, and 126, Terry et al. discloses in Figs. 2 and 6 and at column 4, lines 50-53 that the input and/or out of the system may be provided either in analog or digital form.

23. Regarding claims 31, 63, 93, and 127, in the system of Terry et al. (employed in a telephone network as disclosed at column 3, lines 30-35), the audio data product would normally comprise data encoded according to a particular format (such as analog or digital) suitable for playback by audio systems (e.g., conventional analog or digital telephones) adapted for the particular format (as in a prior-art telephone network without the system of Terry et al.), and the customized audio data product comprises data encoded according to the same particular format. (As Terry et al. discloses that the system is employed within the telephone network and does not disclose any special or modified telephone set, the customized audio data product must inherently be delivered in the same original format to enable playing on the conventional telephone set. For instance, in one embodiment as shown in Fig. 1, the input signal to the system is received in an analog-encoded format, converted to a digitally-encoded format for customization processing within the system, and subsequently converted back to the original analog-encoded format to be forwarded to the receiving telephone set of the customer/user.)

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24. Regarding claims 32, 36, 37, 40, 42, and 76, Terry et al. discloses that the system comprises data processing resources, including a processor (column 3, lines 43-47) (coupled to a [telephone] network and coupled to a device [telephone] for playing the customized audio data product through the telephone network interface) which transforms the audio data product to the customized audio data product using the customer hearing profile (produces the customized audio data product [a transformation of the particular audio data product according to the hearing profile] in response to the audio data product and the customer hearing profile) (column 4, lines 14-17), a network interface (inherently, see column 3, lines 30-35), and logic for transmitting the customized audio data product to a remote location via the network interface (inherently, see column 2, lines 62-65), which transmits the customized audio data product to a remote site. Further regarding claim 42, although Terry et al. does not explicitly disclose transducing the customized audio data product to sound, transmittal to the telephone receiver and perception by the hearing impaired listener, as disclosed at column 2, lines 62-65, inherently includes such transduction.

25. Regarding claims 38 and 112, although Terry et al. does not explicitly disclose a particular storage device for storing the database of hearing profiles (column 2, lines 7-11), a storage device is inherently present; further all commonly known and used storage devices at the time of the invention of Terry et al. (hard disk drives; floppy disks; magnetic tapes; RAM chips, cards, and modules; etc.) are inherently portable (capable of being carried or moved about). An interface for reading a profile from the database

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storage device is also inherently present to allow the processor to read a user hearing profile from the database as generally disclosed by Terry et al. Thus, the data processing resources inherently include an interface for reading a hearing profile from a portable storage device and the step of associating a hearing profile with a particular audio data product (telephone audio from a distant station) in the normal method of operation of the system includes retrieving the hearing profile from a portable memory device.

26. Regarding claim 49, the system of Terry et al., as a whole, can be described as a source of a plurality of customer hearing profiles, and it inherently comprises a network interface (column 3, lines 30-35).

27. Regarding claims 109 and 110, the implementation of the system of Terry et al. inherently requires determining a type of delivery (e.g., in an analog format or a digital format) for the customized audio data product, and in operation, the step of delivering must inherently be responsive to that determined type of delivery in order for the system to be operative. Further regarding claim 110, the step of modifying the customized audio data product will also be responsive to said determination (e.g., whether the modification includes digital-to-analog conversion, or not – see column 4, lines 50-53).

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28. Claims 1, 33, 34, 39, 43, 74, 75, and 111 are rejected under 35 U.S.C. 102(e) as being anticipated by Knappe et al. (US 6,061,431).

29. Regarding claims 1, 39, and 74, Knappe et al. discloses in Fig. 1 a method and system for compensating hearing loss in a telephone system on an individual basis according to recognition of a dialing or dialed telephone number. The system comprises a source of an audio data product (14); processing resources (20 and 26), coupled to the source of an audio data product, configured to associate the audio data product with a customer hearing profile for use in production of a customized audio data product (column 1, lines 37-54). The system performs a method for producing customized audio data, comprising providing an interface (30) for access to an audio data product; receiving (accepting via a data network) a request (machine-readable orders) for the (particular) audio data product from a customer (i.e., the customer 32 requests telephone audio data originating from user 14 by dialing the telephone number of user 14 via the DTMF keypad of telephone terminal [interface] 30, which translates the machine-readable user key depressions into machine-readable tones); receiving a customer hearing profile associated with the customer; and associating the (particular) audio data product with the customer hearing profile for use in production of a customized audio data product (column 1, lines 43-54). Further regarding claim 74, Knappe et al. discloses at column 1, lines 46-54; column 3, lines 13-19; column 3, lines 36-38; and column 4, lines 1-6 that the audio data can be compensated (modified according to the hearing profile to produce a customized audio data product) at either or

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both ends of the signal chain (at the receiving end by signal processing resources 26 and/or at the originating end by signal processing resources 20). Column 1, lines 57-63 indicates that signal processing occurs at the originating end (distant from the hearing impaired customer) so that only audio frequencies within the hearing range of the hearing impaired customer are transmitted over the network, thus conserving bandwidth within the network; while column 3, lines 53-57 indicates that the frequency shaping signal processing to produce the customized audio data product is typically done by signal processor 26 at the receiving end. According to the former option, a customized audio data product is transmitted via a data network to the customer.

30. Regarding claims 33 and 34, as elements communicating via the network, as generally disclosed by Knappe et al., the data processing resources in the system disclosed inherently include a network interface. Further the general disclosure of Knappe et al. indicates that logic is inherently present for transmitting the audio data product and at least a portion of the customer hearing profile to a remote location via the network interface for use in transforming the audio data product (column 1, lines 43-49).

31. Regarding claims 43 and 75, Knappe et al. discloses at column 3, lines 35-57 that frequency shaping (signal processing) according to the customer hearing profile occurs at the receiving end of the voice signal, thus the audio data product and the customer hearing profile are transmitted (delivered) to a remote site. Further regarding

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claim 75, the particular audio data product and the hearing profile are both transmitted via the data network to the customer at a remote site for transformation according to the hearing profile at the remote site; and these data items can collectively be referred to as a "customized audio data product". Therefore, the method performed by the system of Knappe et al. can be described as transmitting (delivering) to the customer, via a data network, a customized audio data product, comprising at least a portion of the (customer) hearing profile, and the particular audio data product for transformation according to the hearing profile at a remote site.

32. Regarding claim 111, the method performed by the system of Knappe et al., according to the specific embodiment indicated at column 3, lines 51-57, comprises delivering a particular audio data product; associating a hearing profile with the particular audio data product; and modifying the particular audio data product according to the hearing profile to produce a customized audio data product (column 1, lines 43-54).

Claim Rejections - 35 USC § 103

33. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

34. Claims 2-4, 10, 44-46, 68, 98, and 132 are rejected under 35 U.S.C. 103(a) as being unpatentable over Knappe et al. (US 6,061,431) in view of Köpke et al. (US 4,471,171).

35. Regarding claims 2-4, 10, 44-46, 68, 98, and 132, Knappe et al. discloses a system and associated method meeting the limitations of claims 1 and 39, as described above. Knappe et al. discloses a customer hearing profile that comprises frequency shaping and gain parameters tailored to a particular user (column 1, lines 43-46). Knappe et al. discloses at column 3, lines 57-60 that frequency shaping, as employed in the disclosed system is well known in the art and is similar to that provided in custom hearing aids. It was well known in the audio signal processing art at the time the present invention was made to store a desired frequency-shaping response for a programmable signal processor in the form of a transfer function, which in turn inherently comprises coefficients. For instance, Köpke et al. discloses a digital hearing aid and method, in which a desired response according to a user's hearing response is

stored in an EEPROM or EARAM memory in the form of a transfer function. (See column 1, lines 15-19, and lines 47-60.) It would have been obvious to one of ordinary skill in the art at the time the present invention was made to store either the customer's hearing response or the desired response of the signal processor, determined therefrom, in the form of a transfer function, according to the teachings of Köpke et al. according to well-known practice in the prior art as a simple design choice to transform the audio data product according [to] a hearing characteristic of a customer.

36. Further regarding claim 44, Knappe et al. discloses at column 4, lines 30-46 that the system takes into account a person's perceptual audio (psycho-acoustic) characteristics by attenuating or discarding sound components that are outside the hearing range of the customer. Thus, the transfer function coefficients determined in the system of Knappe et al., modified according to the teachings of Köpke et al., will transform the audio data product according to a psycho-acoustic characteristic (the sensations or perceptions of a person due to sound) of the customer.

37. Further regarding claims 3, 4, 45, and 46, Knappe et al. discloses in Fig. 2 and at column 1, lines 43-46 and column 3, lines 38-50 that each record (customer hearing profile) (44) in the database (42) contains a telephone number (43) that provides an index to records (customer hearing profiles) in the database. Each telephone number is thus an identifier of the corresponding elements of the customer hearing profile, including the corresponding transfer function and the coefficients of the identified

transfer function to transform the audio data product according to a hearing characteristic of a customer in the system of Knappe et al., modified according to the teachings of Köpke et al. as described above.

38. Further regarding claims 10, 68, 98, and 132, "software" is broadly defined as computer instructions, data, or databases (anything that can be stored electronically) in a computer system, in contrast to the hardware (such as storage devices and display devices) that makes up the system. (Some broader definitions also include system and application documentation as software.) (See <http://www.openprojects.org/software-definition.htm>; <http://wi-fiplanet.webopedia.com/TERM/S/software.html>; or Merriam Webster's Collegiate Dictionary, Tenth Edition.) Because the transfer function coefficients of the customer hearing profiles in the system and method of Knappe et al., modified according to the teachings of Köpke et al. as described above, can be considered either as data to be utilized by the signal processor of the system or as coded instructions, directing the operation of the signal processor of the system, they can be described as software defining a transfer function for producing the customized audio data product.

39. Claims 19-21, 51-53, 81-83, and 117-119 are rejected under 35 U.S.C. 103(a) as being unpatentable over Terry et al. (US 5,388,185).

40. Regarding claims 19-21, 51-53, 81-83, and 117-119, Terry et al. discloses at column 3, lines 36-40 that the source of the audio data product in Fig. 1 may comprise a speech signal generated at the sending end by a telephone user, that the signal may be produced by a microphone, tape recording, oscillator, or other source of audio analog audio signal. Terry et al. does not explicitly disclose that the audio data product (source) comprises pre-recorded audio music tracks, live audio music streams, nor pre-recorded audio voice tracks. Official notice is taken that it was well known in the art at the time the present invention was made to provide various forms of pre-recorded (with a tape recording or equivalent means) and live audio to a user of a telephone network. For example, it was well known to provide pre-recorded voice messages and prompts in automated PBX (private branch exchange) systems and other automated interactive telephone systems. It was also well known to provide either pre-recorded or live (streaming) "music on hold" in PBX systems and similar telephone systems having a "hold" function, the pre-recorded audio originating from a tape recording or similar means, and the live streaming music originating from a local or distant radio station or other streaming background music source provider. It would have been obvious to one of ordinary skill in the art at the time the present invention was made to provide any of these well-known audio sources at a distant (source) telephone station in the system of Terry et al., thus providing an audio data product that comprises pre-recorded audio music tracks, live audio music streams, or pre-recorded audio voice tracks.

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41. Claims 35 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Terry et al. (US 5,388,185) in view of Ohuchi et al. (US 5,526,423).

42. Regarding claims 35 and 41, Terry et al. discloses a system and associated method for providing customized audio in a telephone network meeting the limitations of claims 1 and 39, as described above, and including data processing resources that in turn include a processor that transforms the audio data product to the customized audio data product using the customer hearing profile. Terry et al. discloses a memory device to store data on a machine-readable medium (buffers 30 and 100), and logic for storing (a portion at a time of) the customized audio data product on the machine-readable medium. Ohuchi et al. discloses a system and method for executing special services in a local telephone subsystem (such as a PBX) in response to particular dialed telephone numbers. In one embodiment, illustrated in Fig. 13 and described at column 8, line 56 – column 14, line 49, the system comprises a private branch exchange (PBX) system (101) in communication with a public telephone network (111), including a memory device (audio response device 107) to store data on a machine-readable medium (memory 112) and logic (central controller 104 in combination with main memory 105) for storing a received audio data product on the machine-readable medium (column 9, lines 14-19; column 9, lines 33-49; and column 10, lines 8-18). Ohuchi et al. discloses at column 11, lines 41-64 that the system allows audio information from a chargeable audio information service to be stored for subsequent replay from the local PBX system without incurring additional charges for repeated calls to the information service

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provider. Ohuchi et al. also discloses at column 11, lines 18-20 that "[i]f it is feared that a recording may not be understood perfectly by only a single playback operation, playback is repeated a predetermined number of times." One of ordinary skill in the art would recognize that such a capability could be advantageous to the hearing-impaired user of the system of Terry et al., who may indeed have difficulty in understanding received voice information. It would have been obvious to one of ordinary skill in the art at the time the present invention was made to use the PBX system of Ohuchi et al. in combination with the customized audio processing system of Terry et al., or to simply include a voice recording device as taught by Ohuchi et al. in the system of Terry et al., in order to allow the customized audio data product to be played back repeatedly, in case, despite the customization of the audio data product, the hearing-impaired customer still has difficulty understanding the customized audio data product.

43. Claim 64 is rejected under 35 U.S.C. 103(a) as being unpatentable over Terry et al. (US 5,388,185) in view of Zanchi et al. (US 5,630,159).

44. Regarding claim 64, Terry et al. does not disclose that the plurality of customer hearing profiles each include a value indicating an audio device on which the customized audio data product is to be played. Zanchi et al. discloses a method and system for providing customized audio data to a user according to user preferences, including audible (audio) preferences, according to the user identity, environment (e.g., office, home, vehicle, or aircraft), and the device on which the media (including audio) is

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to be played (e.g., cellular phone, organizer, personal computer, or vehicle) (See Figs. 2 and 11; column 2, lines 33-40; column 7, lines 4-12; and column 9, lines 49-55).

Although not explicitly disclosed by Zanchi et al., one of ordinary skill in the art would recognize that a primary reason for providing separate preference parameters (including audio preferences) is to compensate for differences in the way different devices render the same standard media (see column 7, lines 19-26), so that a desirable response is provided. It would have been obvious to one of ordinary skill in the art at the time the present invention was made to apply the teachings of Zanchi et al. to the system and method of Terry et al. by providing a value in each user hearing profile that indicates the device on which the customized audio data product is to be played, in order to allow consistent reproduction of the customized audio data product on a variety of different devices (different types of telephones used by a given customer).

Conclusion

45. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

46. Miller et al. (US 6,036,496) discloses a system for providing customized audio for language learning impaired subjects through a computer according to a determined hearing profile.

47. Campbell et al. (US 6,212,496) discloses a digital telephone providing customized audio according to one of a plurality of user hearing profiles stored within the telephone.

48. Berger et al. (US 6,684,063) discloses a wireless telephone having a built-in hearing aid that provides customized audio to a user according to a hearing profile stored either on a removable memory card or a centralized database, storing hearing profiles for a plurality of users.

49. Basseas (US 6,674,867) discloses a fuzzy-logic device for programming hearing aids, which adapts future fittings according to feedback from prior fittings to provide an optimally efficient fitting procedure.

50. Elwin (US 6,463,128) discloses a portable telephone system in which a hearing profile for a local user is transmitted to a distant phone, and the distant phone encodes audio to be transmitted to the local user's phone according to the hearing profile to avoid transmission of audio data that would not be perceptible to the local user in order to maximize the efficiency of the audio data transmission in view of the local user's hearing capabilities.

51. Beamish (US 6,694,143) discloses a local wireless network that transmits user hearing profile data to a wireless communication device within the range of the wireless

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network to allow the wireless communication device to transform audio data to produce a customized audio data product for the user.

52. Greene et al. (US Patent Application Publication No. 2003/0128859) discloses a system and method for providing customized audio to a hearing-impaired user through a digital audio device, which accesses the user's hearing profile through a network.

53. Bantz et al. (US Patent Application Publication No. 2003/0165247) discloses a system for providing customized audio in a system such as a computer or programmable hearing aid, in which a user's hearing profile is determined and programmed into a memory device of a transmitter ("user FOB"). The hearing profile data is transmitted from the user FOB to a compatible audio processing device in close proximity to the user FOB to allow filtering according to the hearing profile and thus provide a customized audio data product.

54. Hideaki et al. (JP 11133998 A) discloses a system and method for providing customized audio in a communication network, such as the Internet, according to a user hearing profile stored in memory.

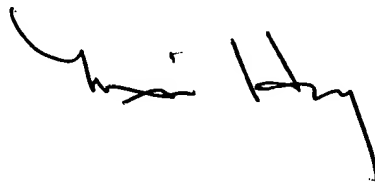
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tony M Jacobson whose telephone number is 703-305-5532. The examiner can normally be reached on M-F 11:00-7:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Forester W Isen can be reached on 703-305-4386. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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June 15, 2004



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PRIMARY EXAMINER